

Remarks/Arguments

The Invention Title

The Examiner has objected to the title of the Invention as being non-descriptive of the invention. The title has been amended to "Switched-mode power supply comprising an adjustable oscillator". Applicant asserts the amended title is descriptive.

35 U.S.C. §102

Claims 1-11 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,361,865 (Shono). The switched mode power supply according to amended claim 1 has a transformer, a switching transistor and an integrated circuit comprising a driver stage and a control circuit with an oscillator, which is adjustable via a connection to which an external capacitor is coupled for adjusting a switching frequency of the driver stage, see page 3, 3rd and 4th paragraph of the specification, see also figure 1. The capacitor is charged by means of an oscillation occurring on the secondary winding, as disclosed on page 9, first paragraph of the description.

Amended claim 1 comprises further features from present claim 10. The remaining claims have been amended accordingly. In addition, amended claim 10 has been amended in that the external circuit has been better defined by comprising now a resistor and said capacitor, see page 3, 3rd paragraph, also figures 1 and 2.

The switching transistor is therefore switched-on when an oscillation on a transformer winding occurs, which provides for zero voltage switching of the switched mode power supply. By charging the capacitor of the oscillator of the integrated circuit, the zero voltage switching can be provided for an integrated circuit, which is according to its design not useable for zero voltage switching otherwise.

The reference Shono, US 4,361,865, describes a switched-mode power supply having a transformer with a primary winding and with secondary windings, a switching transistor and a control stage with a driver stage. A first secondary winding provides a variable direct current via a resistor and a diode for switching through the switching transistor and a second, secondary winding charges a capacitor via a diode, whereby the voltage across the capacitor defines the turn-off of the switching transistor.

Not shown by Shono is an integrated circuit with a driver stage for controlling the switching transistor, which comprises a control circuit with an oscillator which comprises a connection, to which an external capacitor is coupled for adjusting a switching frequency of the driver stage. No capacitor coupled to an oscillator is shown which is charged by means of an oscillation occurring on the secondary winding in order to determine the switch-on time of the switching transistor. The switched mode power supply of Shone is therefore completely different with regard to the switched mode power supply as defined by amended claim 1.

Although Examiner does not specifically cite other references as barring patentability, Applicant provides the following commentary. The reference Rao, US 4,253,137, describes a switched mode power supply comprising a switching transistor, a driver stage and a transformer with a primary winding and two secondary windings. The first secondary winding is included in a first secondary circuit which conducts a current simultaneously with the switching transistor and which generates a non-regulated voltage, and the second secondary winding is included in a second secondary circuit, which is a part of a flyback converter. The output voltages of the first and the second secondary circuit are added and regulated by means of the driver stage.

The DC-DC converter of Pilukatis et al, US 4,504,898, comprises a control circuit coupled to an input voltage, which is provided by a current limited source. The control circuit is adapted to control the start-up trajectory of the DC-DC converter as a function of the input voltage, for providing a soft start of the switched mode power supply, to provide a compatible load for the current limited source.


The reference Peruth et al, US 4,648,016, describes a switched mode power supply comprising a transformer, a switching transistor and an integrated control circuit. The integrated control circuit includes a correction circuit comprising a voltage divider coupled to a primary input voltage, to make the maximum power of the switched mode power supply independent of the voltage value of the input voltage.

None of the cited references shows an oscillator, to which a capacitor is coupled which is charged by means of an oscillation occurring on the secondary winding in order to determine the switch-on time of the switching transistor, as described by amended claim 1, or gives any hint in this direction. Amended claim 1 is therefore new and inventive over the cited references. Claims 2-11, being dependent on and further limiting an allowable base claim, are in themselves thus allowable.

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at (317) 587-4029, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No additional fee is believed due. However, if an additional fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,

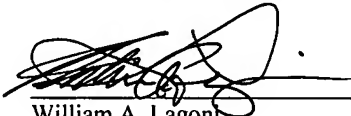

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October 26, 2007

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I hereby certify that this amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Mail Stop AMENDMENT, Commissioner for Patents, Alexandria, Virginia 22313-1450 on:

October 26, 2007
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William A. Lagoni